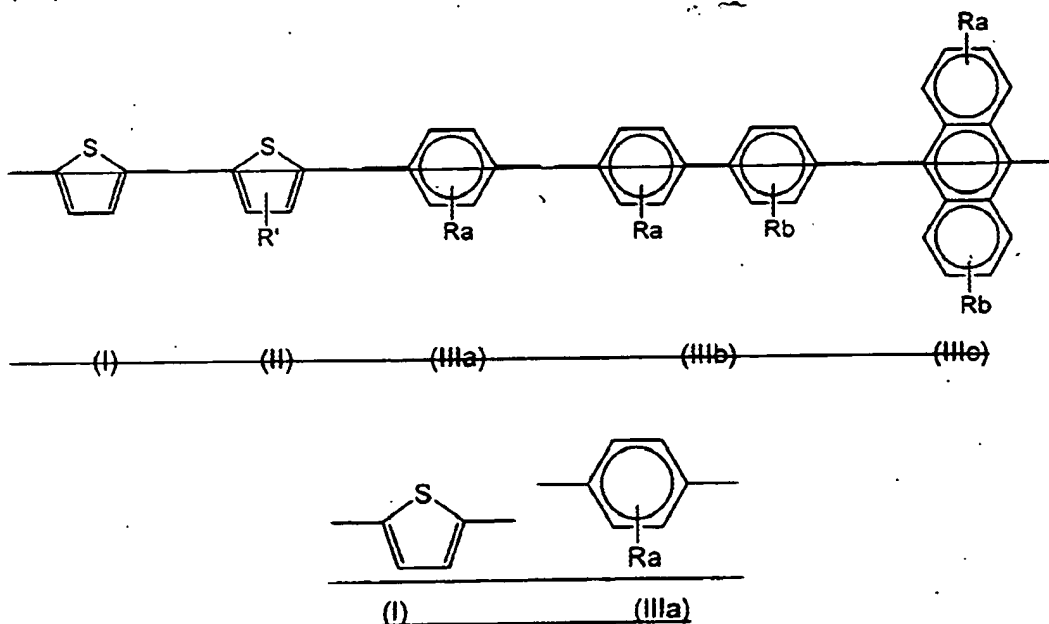


CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An electronic device containing a thienylene-arylene polymer ~~comprised consisting~~ of a repeating segment containing ~~at least one~~ two 2,5-thienylene units of (I) ~~or (II)~~, and ~~at least one~~ arylene unit of (IIIa), (IIIb), or (IIIc)



wherein each R is independently ~~an alkyl or an alkoxy side chain~~; ~~R' is halogen, alkyl, or alkoxy~~, and ~~a and b represents the number of R groups and a is 2~~, and ~~wherein the number of said arylene units (IIIa), (IIIb), and (IIIc) is from about 1 to about 3.~~

2. (Currently Amended) A device in accordance with claim 1 wherein ~~each R contains from about 1 to about 25 carbon atoms; R' is alkyl or alkoxy containing from about 1 to about 30 atoms, and wherein the number of 2,5-thienylene (I) and R'-substituted 2,5-thienylene units (II) in the repeating segment are each independently from 0 to about 10, provided at least one of said units (I) or (II) is present.~~

3. (Cancelled).

4. (Original) A device in accordance with claim 1 wherein R is alkyl or alkoxy selected from the group consisting of pentyl, pentyloxy, hexyl, hexyloxy, heptyl, heptyloxy, octyl, octyloxy, nonyl, nonyloxy, decyl, decyloxy, undecyl, undecyloxy, dodecyl, dodecyloxy, tridecyl, tridecyloxy, tetradecyl, tetradecyloxy, pentadecyl, and pentadecyloxy.

5. (Cancelled).

6. (Cancelled).

7. (Cancelled).

8. (Original) A device in accordance with claim 7 wherein dialkoxyphenylene is selected from the group consisting of bis(pentyloxy)phenylene, bis(hexyloxy)phenylene, bis(heptyloxy)phenylene, bis(nonyloxy)phenylene, bis(undecyloxy)phenylene, bis(dodecyloxy)phenylene, bis(tridecyloxy)phenylene, bis(tetradecyloxy)phenylene, and bis(pentadecyloxy)phenylene.

9. (Cancelled).

10. (Cancelled).

11. (Original) A thin film transistor comprised of a substrate, a gate electrode, a gate dielectric layer, a source electrode and a drain electrode, and a semiconductor layer comprised of the thienylene-arylene polymer of claim 1.

12. (Currently Amended) A thin film transistor in accordance with **claim 11** wherein R is ~~alkyl or alkoxy~~ containing from about 5 to about 25 carbon atoms, ~~and R' is alkyl or alkoxy containing from 1 to about 25 carbon atoms.~~

13. (Cancelled).

14. (Cancelled).

15. (Cancelled).

16. (Currently Amended) A thin film transistor in accordance with **claim 15** **11** wherein said ~~dialkylphenylene or dialkoxyphenylene~~ is selected from the group consisting of ~~dipentylphenylene, dihexylphenylene, diheptylphenylene, dinonylphenylene, bis(undecyl)phenylene, bis(dodecyl)phenylene, bis(tridecyl)phenylene, bis(tetradecyl)phenylene, bis(pentadecyl)phenylene,~~ bis(pentyloxy)phenylene, bis(hexyloxy)phenylene, bis(heptyloxy)phenylene, bis(nonyloxy)phenylene, bis(undecyloxy)phenylene, bis(dodecyloxy) phenylene, bis(tridecyloxy)phenylene, bis(tetradecyloxy)phenylene, and bis(pentadecyloxy)phenylene.

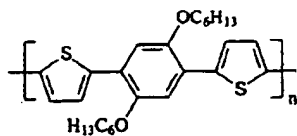
17. (Cancelled).

18. (Cancelled).

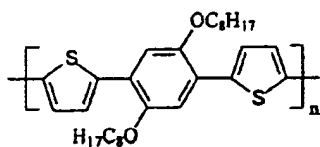
19. (Cancelled).

20. (Cancelled).

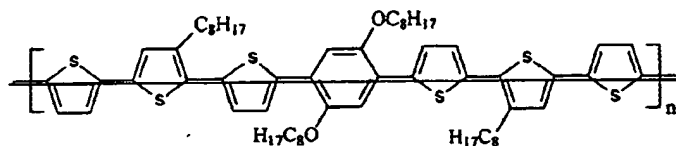
21. (Original) A thin film transistor in accordance with ~~claim 17~~ comprised of a substrate, a gate electrode, a gate dielectric layer, a source electrode, a drain electrode, and a semiconductor layer comprised of a polymer wherein said polymer ~~(IV-a) or (IV-b)~~ is selected from a thienylene-arylene semiconductor polymer (1) through ~~(20)~~ (5)



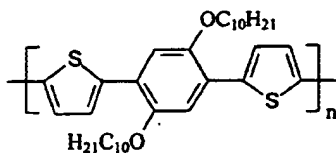
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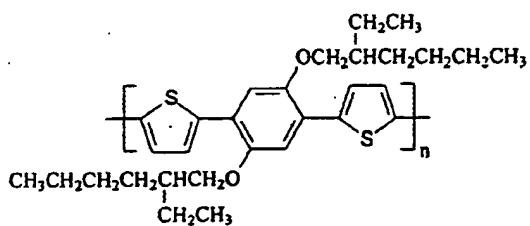
(2)



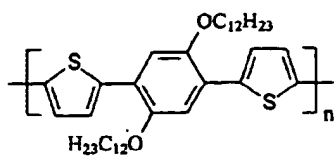
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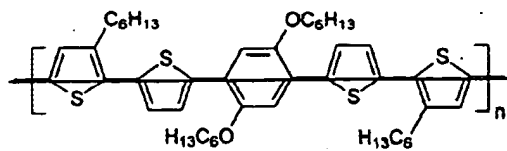
(4) (3)



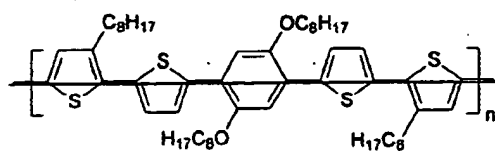
(5) (4)



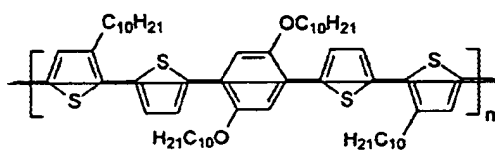
(6) (5)



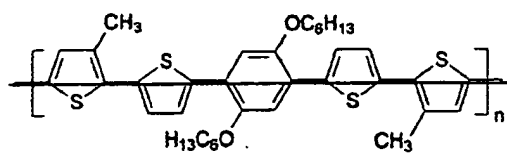
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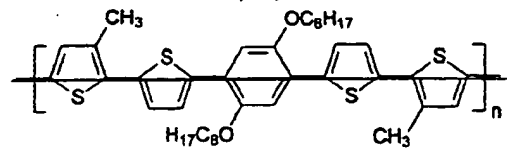
(8)



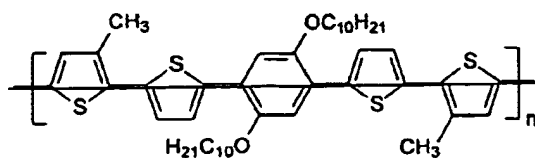
(9)



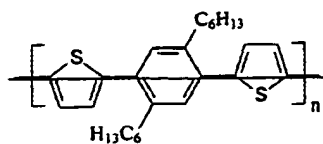
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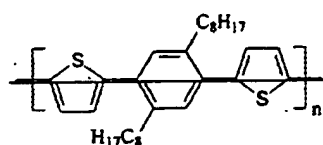
(11)



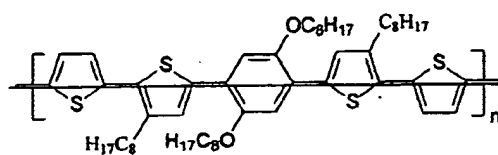
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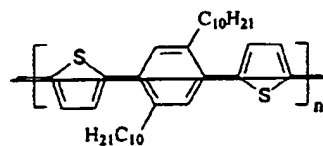
(43)



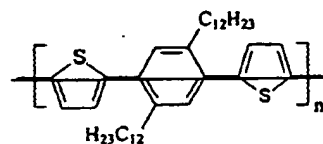
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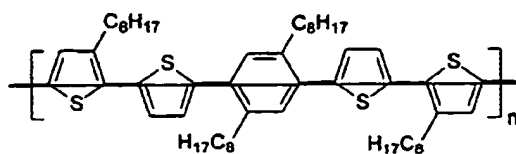
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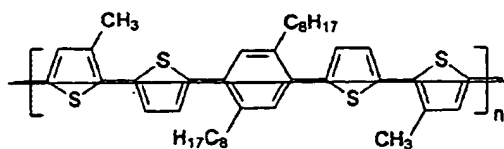
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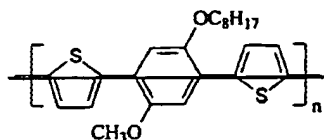
(47)



(18)



(19)



(20)

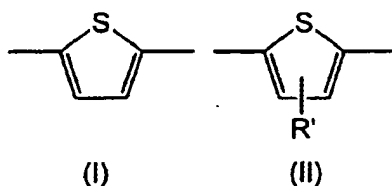
wherein n is from about 5 to about 500.

22. (Cancelled).
23. (Cancelled).
24. (Cancelled).
25. (Cancelled).
26. (Cancelled).
27. (Cancelled).
28. (Cancelled).
29. (Cancelled).
30. (Cancelled).
31. (Cancelled).
32. (Cancelled).
33. (Cancelled).
34. (Cancelled).
35. (Cancelled).
36. (Cancelled).
37. (Cancelled).
38. (Cancelled).

39. (Cancelled).
40. (Cancelled).
41. (Cancelled).
42. (Cancelled).
43. (Cancelled).
44. (Cancelled).
45. (Cancelled).

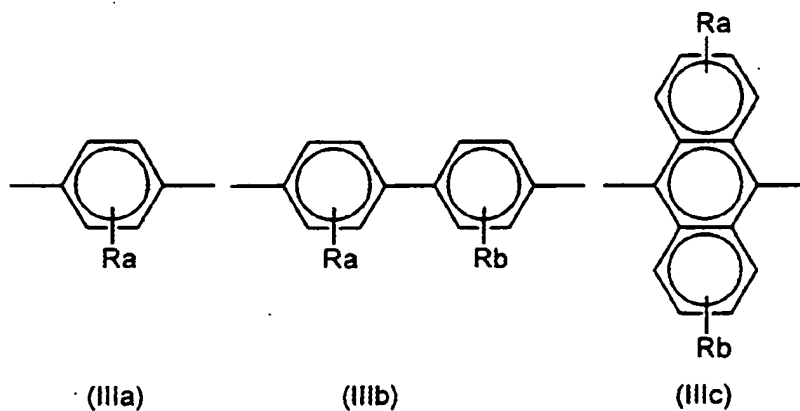
46. (Currently Amended) An electronic device containing a thienylene-arylene polymer ~~comprised~~ consisting of a repeating segment containing at least one 2,5-thienylene segment and at least one arylene segment, wherein the number of said arylene segments is from about 1 to about 3.

47. (Previously Presented) The electronic device of claim 46 wherein the 2,5-thienylene segment comprises at least one 2,5-thienylene unit of (I) or (II)



wherein R' is halogen, alkyl, or alkoxy.

48. (Previously Presented) The electronic device of claim 46 wherein the arylene segment comprises at least one arylene unit of (IIIa), (IIIb), or (IIIc)



wherein each R is independently an alkyl or an alkoxy side chain; and a and b represent the number of R groups, and wherein the number of said arylene units (IIIa), (IIIb), and (IIIc) is from about 1 to about 3.

49. (NEW) A device in accordance with claim 2 wherein a and b are 1 or 2.

50. (NEW) A device in accordance with claim 1 wherein R' is alkyl or alkoxy selected from the group consisting of methyl, methoxy, ethyl, ethoxy, propyl, propoxy, butyl, butoxy, pentyl, pentyloxy, hexyl, hexyloxy, heptyl, heptyloxy, octyl, octyloxy, nonyl, nonyloxy, decyl, decyloxy, undecyl, undecyloxy, dodecyl, dodecyloxy, tridecyl, tridecyloxy, tetradecyl, tetradecyloxy, pentadecyl, and pentadecyloxy.

51. (NEW) A device in accordance with claim 1 wherein said arylene is a dialkylphenylene or dialkoxyphenylene.

52. (NEW) A device in accordance with claim 1 wherein arylene is dialkoxyphenylene.

53. (NEW) A device in accordance with claim 1 wherein said arylene is dialkylphenylene.

54. (NEW) A device in accordance with claim 9 wherein said dialkylphenylene is selected from the group consisting of dipentylphenylene, dihexylphenylene, diheptylphenylene, dioctylphenylene, dinonylphenylene, didecylphenylene, bis(undecyl)phenylene, bis(dodecyl)phenylene, bis(tridecyl)phenylene, bis(tetradecyl)phenylene, and bis(pentadecyl)phenylene.

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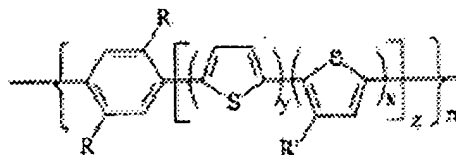
55. (NEW) A thin film transistor in accordance with claim 11 wherein R' is halogen of a chlorine or bromine atom.

56. (NEW) A thin film transistor in accordance with claim 11 wherein a and b are independently 1 or 2.

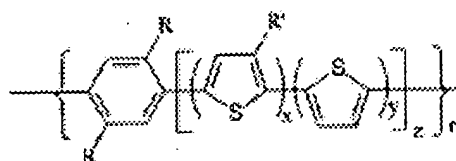
57. (NEW) A thin film transistor in accordance with claim 11 wherein arylene is a dialkylphenylene or a dialkoxyphenylene.

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58. (NEW) A thin film transistor comprised of a substrate, a gate electrode, a gate dielectric layer, a source electrode, a drain electrode, and a semiconductor layer comprised of a polymer represented by Formula (IV-a) or (IV-b)



(IV-a)



(IV-b)

wherein R is an alkyl or alkoxy of from about 5 to about 25 carbon atoms; R' is halogen, alkyl or alkoxy, each with about 1 to about 30 carbon atoms; x and y represent the number of segments-units and are optionally independently from 0 to about 10, provided that the sum of x and y is at least equal to 1; z is about 1 to about 5, and n is the degree of polymerization, or the number of repeating segments in said polymer, and wherein said n is optionally from about 5 to about 500.

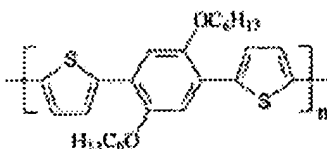
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59. (NEW) A thin film transistor in accordance with claim 58 wherein R is pentyl, hexyl, heptyl, octyl, nonyl, decyl, undecyl, dodecyl, tridecyl, tetradecyl, pentyldecyl, pentyloxy, hexyloxy, heptyloxy, octyloxy, nonyloxy, decyloxy, undecyloxy, dodecyloxy, tridecyloxy, tetradecyloxy, or pentadecyloxy.

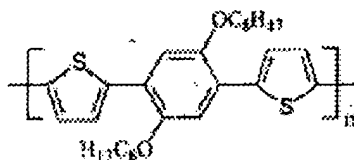
60. (NEW) A thin film transistor in accordance with claim 58 wherein R' is methyl, ethyl, propyl, butyl, pentyl, hexyl, heptyl, octyl, nonyl, decyl, undecyl, dodecyl, tridecyl, tetradecyl, pentyldecyl, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, heptyloxy, octyloxy, nonyloxy, decyloxy, undecyloxy, dodecyloxy, tridecyloxy, tetradecyloxy, or pentadecyloxy.

61. (NEW) A thin film transistor in accordance with claim 58 wherein x, y and z are each independently from about 1 to about 5.

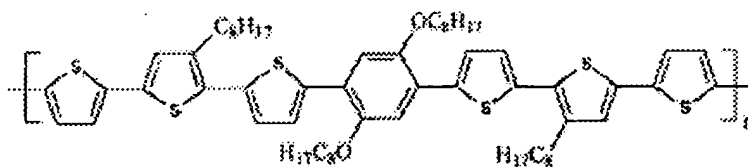
62. (NEW) A thin film transistor in accordance with claim 58 wherein said polymer is a thienylene-arylene semiconductor selected from (1) through (15)



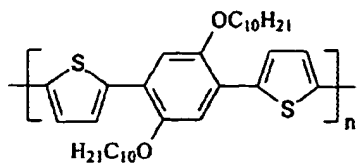
(1)



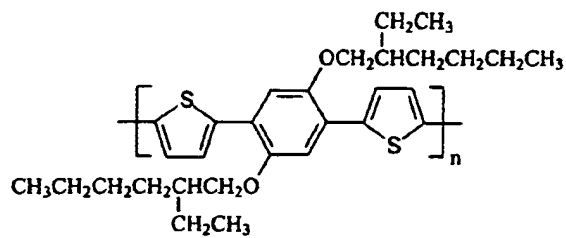
(2)



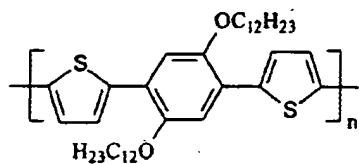
(3)



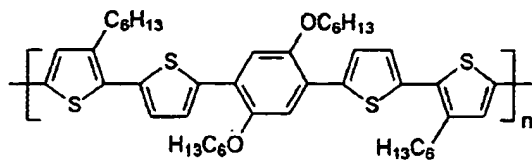
(4)



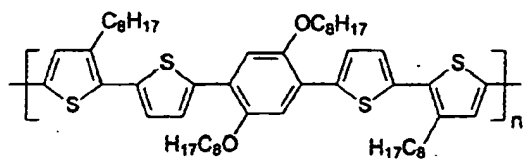
(5)



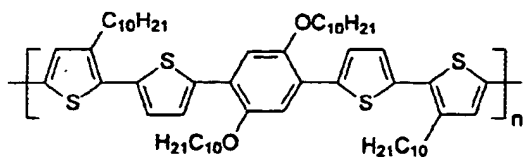
(6)



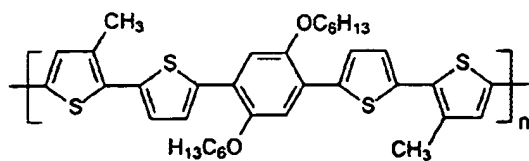
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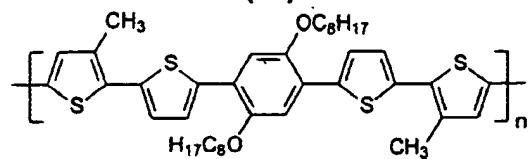
(8)



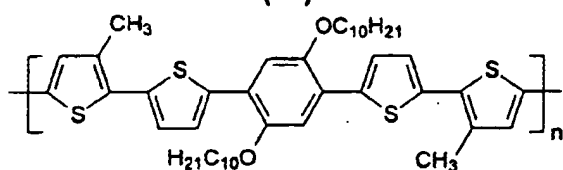
(9)



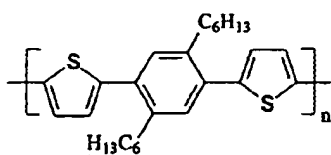
(10)



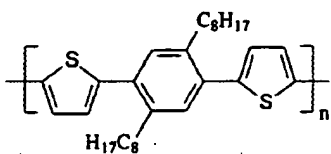
(11)



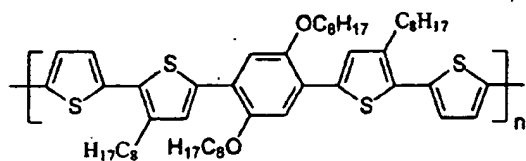
(12)



(13)



(14)



(15)

wherein n is from about 5 to about 200.

63. (NEW) A thin film transistor in accordance with **claim 47** **21** wherein said polymer is a thienylene-arylene semiconductor polymer selected from the group consisting of semiconductor polymer (2), (4), (6), (7), (8), (9), (10), (11), (12), (17), (18), and (19), wherein n is from about 25 to about 160.

64. (NEW) A thin film transistor in accordance with **claim 58** wherein said substrate is a plastic sheet of a polyester, a polycarbonate, or a polyimide; said gate, source, and drain electrodes are each independently comprised of gold, nickel, aluminum, platinum, indium titanium oxide, a conductive polymer, a conductive ink or paste comprising a dispersion of conductive particles in a dispersing medium, and said gate dielectric layer is comprised of silicon nitride, silicon oxide, insulating polymers of a polyester, a polycarbonate, a polyacrylate, a poly(methacrylate), a poly(vinyl phenol), a polystyrene, a polyimide, an epoxy resin, an inorganic-organic composite material of nanosized metal oxide particles dispersed in a polymer, a polyimide, or an epoxy resin; and wherein said source/drain electrodes and said gate dielectric layer are in contact with said semiconductive layer.

65. (NEW) A thin film transistor in accordance with **claim 58** wherein said substrate is glass or a plastic sheet; said gate, source and drain electrodes are each independently comprised of gold; said gate dielectric layer is comprised of an organic polymer of poly(methacrylate), polyacrylate, poly(vinyl phenol), polystyrene, polyimide, polycarbonate, or a polyester, and wherein said source/drain electrodes and said gate dielectric layer are in contact with said semiconductive layer.

66. (NEW) A thin film transistor in accordance with **claim 58** wherein said polymer is a thienylene-arylene semiconductor layer formed by the solution process of spin coating, stamp printing, screen printing, or jet printing, and wherein said source/drain electrodes and said gate dielectric layer are in contact with said semiconductor layer.

67. (NEW) A thin film transistor device in accordance with claim 58 wherein said gate, source and drain electrodes, dielectric, and semiconductor layers are formed from components deposited by solution processes of spin coating, solution casting, stamp printing, screen printing, and jet printing, and wherein said source/drain electrodes and said gate dielectric layer are in contact with said polymer layer.

68. (NEW) A thin film transistor device in accordance with claim 58 wherein the substrate is a plastic sheet of a polyester or a polycarbonate, and the gate, source and drain electrodes are comprised of conductive polymers of polystyrene sulfonate-doped poly(3,4-ethylenedioxythiophene) or a conductive ink or paste of a colloidal dispersion of a metal of silver or gold in a binder, and the gate dielectric layer is an organic polymer or an inorganic oxide particle-polymer composite, and wherein said source/drain electrodes and said gate dielectric layer are in contact with said polymer layer.

69. (NEW) A thin film transistor device in accordance with claim 58 wherein n is from about 50 to about 500, or from about 100 to about 350.

70. (NEW) A thin film transistor in accordance with claim 58 wherein the number average molecular weight (M_n) of (IV-a) or (IV-b) is from about 2,000 to about 100,000, and the weight average molecular weight (M_w) thereof is from about 4,000 to about 300,000, each as measured by gel permeation chromatography using polystyrene standards.

71. (NEW) A thin film transistor in accordance with claim 58 wherein the number average molecular weight (M_n) of (IV-a) or (IV-b) is from about 10,000 to about 50,000 and the weight average molecular weight (M_w) is from about 15,000 to about 100,000.

72. (NEW) A thin film transistor in accordance with claim 50 wherein the thickness of the substrate is from about 500 micrometers to about 2 millimeters; the thickness of the gate dielectric layer is from about 100 nanometers to about 500 nanometers; the thickness of the polymer semiconductor layer is from about 50 nanometers to about 100 nanometers; and the thickness of the gate, source and drain electrode layer are each from about 50 nanometers to about 1 micrometer.

73. (NEW) A device in accordance with claim 1 wherein said arylene is a dialkoxyphenylene of bis(octyloxy)phenylene, or bis(decyloxy)phenylene.

74. (NEW) A device in accordance with claim 53 wherein said dialkylphenylene, or didecylphenylene.

75. (NEW) A device in accordance with claim 52 wherein said dialkylphenylene is dioctylphenylene.

76. (NEW) A device in accordance with claim 57 wherein said dialkylphenylene is dioctylphenylene, didecylphenylene, bis(octyloxy)phenylene, or bis(decyloxy)phenylene.

77. (NEW) A device in accordance with claim 1 wherein at least one is from 1 to about 50.

78. (NEW) A device in accordance with claim 1 wherein at least one is from about 5 to about 100.

79. (NEW) A device in accordance with claim 1 wherein at least one is 1.

80. (NEW) A device in accordance with claim 1 wherein (IIIa) is selected.

81. (NEW) A device in accordance with claim 1 wherein (IIIb) is selected.

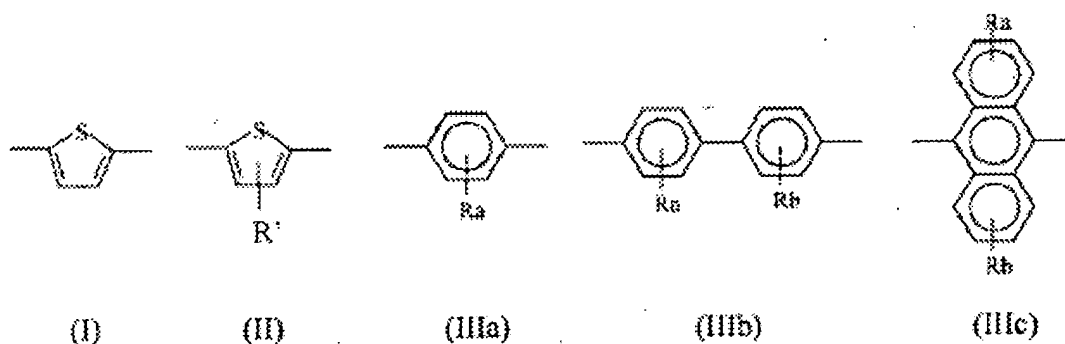
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82. (NEW) A device in accordance with claim 1 wherein (IIIc) is selected.

83. (NEW) A device in accordance with claim 58 wherein (IV-a) is selected.

84. (NEW) A device in accordance with claim 58' wherein (IV-b) is selected.

85. (NEW) A thin film transistor comprised of a 2,5-thienylene repeating segment of (I) or (II), and at least one arylene segment of (IIIa), (IIIb), or (IIIc)



wherein each R is independently an alkyl or an alkoxy side chain; R' is halogen, alkyl, or alkoxy, and a and b represent the number of R segments or groups.